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EXAMINER	
PHUONG, DAI	

ART UNIT	PAPER NUMBER
2685	

DATE MAILED: 07/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/670,639	LYLE ET AL.	
	Examiner	Art Unit	
	Dai A Phuong	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,11-29 and 31-33* is/are rejected.

7)☒ Claim(s) *10 and 30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-9, 11-29 and 31-33 rejected under 35 U.S.C. 102(e) as being anticipated by anticipated Malhotra et al. (Pub. No: 2002/0181417).

Regarding claim 1, Malhotra et al. disclose an access point, AP 1, mitigation apparatus for mitigating access point data rate degradation with respect to a wireless communication between an access point and a client, NS 1 (network station, [0057]), the access point mitigation apparatus comprising: a channel assessment module, 13 (fig. 2, [0054]), configured to assess a plurality of communications channels ([0060]. Specifically, Malhotra et al. recite a channel scanning procedure 200 executed by access point AP1 at start up in order to **collect statistical information on all channels** and choose the best channel available) and establish a plurality of communications quality parameters, each communications quality parameter associated with one of the plurality of communications channels ([0060]. Specifically, Malhotra et al. recite a channel scanning procedure 200 executed by access point AP1 at start up in order to **collect statistical information on all channels**); a channel selection module, 12 (fig. 2, [0054]), configured to select a best wireless communications channel from the plurality of

communications channels based on the plurality of communications quality parameters ([0059] and [0060]. Specifically, Malhotra et al. recite in section [0059] that the activation of an interfering source IS shown in FIG. 1 will cause sudden interference to AP1 because it is using the same channel C1. Now, access point AP1 can choose to decide to **change its channel in use and switch to another channel** after a random time after the interference experienced by it exceeds a certain threshold. The choice of its new channel will be based on the statistical information collected and stored by it over time for all other channels); and a channel connection module, 12 (fig. 2, [0054]), configured to facilitate a new wireless communication between the access point, AP 1, and the client, NS 1, over the best wireless communications channel ([0059]. Specifically, Malhotra et al. recite at step 202, AP1 first waits a random time between 0 and 20 ms. At step 204, a channel variable j is set to 1. Now, at step 206, the access point AP1 will **switch to channel j**, please see section [0060])

Regarding claim 2, Malhotra et al. disclose all the limitation in claim 1. Further, Malhotra et al. disclose the access point mitigation apparatus wherein the channel assessment module is further configured to assess a power intensity ([0052]. Specifically, Malhotra et al. recite the circle 6 depicts the positions in which the **receive level of the** signal coming from IS equals the carrier detect threshold of AP1) and a duration of an interfering signal present on one of the plurality of wireless communications channels ([0060]).

Regarding claim 3, Malhotra et al. disclose all the limitation in claim 1. Further, Malhotra et al. disclose the access point mitigation apparatus wherein the channel

assessment module is further configured to assess a type of interference source communicating an interfering signal present on one of the plurality of wireless communications channels ([0052] and [0059]. Specifically, Malhotra et al. recite the circle 6 depicts the positions in which the **receive level of the** signal coming from IS equals the carrier detect threshold of AP1 in section [0052]).

Regarding claim 4, Malhotra et al. disclose all the limitation in claim 1. Further, Malhotra et al. disclose the access point mitigation apparatus further comprising a client notification module, 130 (fig. 4, [0057]), configured to notify the client of the best wireless communications channel selected ([0072]. Specifically, Malhotra et al. recite if an AP is changing its channel for scanning purposes, it can instruct its network stations to follow).

Regarding claim 5, Malhotra et al. disclose all the limitation in claim 1. Further, Malhotra et al. disclose the access point mitigation apparatus further comprising a channel switching module configured to discontinue a previous wireless communication with the client over a previous wireless communications channel prior to facilitating the new wireless communication between the access point and the client over the best wireless communications channel, wherein the previous wireless communications channel is one of the plurality of communications channels that is not the best communications channel ([0059]).

Regarding claim 6, Malhotra et al. disclose all the limitation in claim 1. Further, Malhotra et al. disclose the access point mitigation apparatus wherein the channel assessment module is further configured to identify one of the plurality of

communications channels on which no interference is detected as an interference-free channel ([0072]) and to discontinue assessing the plurality of communications channels in response to identifying the interference-free channel ([0072]. Specifically, Malhotra et al. recite this kind of a scanning procedure will be **initiated every time the disturbances experienced** by the AP on its current channel exceed a certain threshold) and wherein the channel selection module is further configured to select the interference-free channel as the best wireless communications channel ([0072]).

Regarding claim 7, Malhotra et al. disclose all the limitation in claim 1. Further, Malhotra et al. disclose the access point mitigation apparatus wherein the channel assessment module is further configured to assess the plurality of communications channels and establish the plurality of communications quality parameters upon initial startup of the access point ([0060]).

Regarding claim 8, Malhotra et al. disclose all the limitation in claim 1. Further, Malhotra et al. disclose the access point mitigation apparatus wherein the channel assessment module is further configured to **periodically** assess the plurality of communications channels and update the plurality of communications quality parameters as specified by a user ([0059] and [0060]. Specifically, Malhotra et al. recite the choice of its new channel will be based on the statistical information collected and stored by it over time for all other channels. The **most recent information** will be given more weight than the old information in section [0059] and **these values are stored in a table** in section [0060]).

Regarding claim 9, Malhotra et al. disclose all the limitation in claim 1. Further, Malhotra et al. disclose the access point mitigation apparatus wherein the channel assessment module is further configured to track a plurality of communications quality parameter histories ([0059] and [0060]. Specifically, Malhotra et al. recite the choice of its new channel will be based on the statistical information collected and **stored by it over time** for all other channels. The **most recent information** will be given more weight than the old information in section [0059] and **these values are stored in a table** in section [0060]).

Regarding claim 11, Malhotra et al. disclose all the limitation in claim 1. Further, Malhotra et al. disclose the access point mitigation apparatus wherein the channel assessment module is further configured to determine the presence of an interfering signal on one of the plurality of communications channels ([0052] and [0059]).

Regarding claim 12, Malhotra et al. disclose a system for mitigating access point data rate degradation with respect to a wireless communication between an access point, AP1, and a client, NS 1, ([0051]) the system comprising: a network server configured to communicate with the access point over a network ([0057]. Specifically, Malhotra et al. recite the access point AP1, AP2 is connected to a wired distribution network 140 through I/O means 132 for communication with other access points and/or other communication devices); the access point, AP 1, configured to communicate with the client over one of a plurality of communications channels ([0060] and [0061]. Specifically, Malhotra et al. recite where the value CS(j) is the **highest among the channels** that meat the condition of step 220, will be used for C_optimal. See step 224.

The final step is step 226 in which the AP will go to channel C_optimal to operate on. It should be noted that N is the maximum number channel, where N is larger than 1); a channel assessment module configured to assess the plurality of communications channels ([0060]. Specifically, Malhotra et al. recite a channel scanning procedure 200 executed by access point AP1 at start up in order to **collect statistical information on all channels** and choose the best channel available) and establish a plurality of communications quality parameters, each communications quality parameter associated with one of the plurality of communications channels ([0060]. Specifically, Malhotra et al. recite a channel scanning procedure 200 executed by access point AP1 at start up in order to **collect statistical information on all channels**); a channel selection module configured to select a best wireless communications channel from the plurality of communications channels based on the plurality of communications quality parameters ([0059] and [0060]. Specifically, Malhotra et al. recite in section [0059] that the activation of an interfering source IS shown in FIG. 1 will cause sudden interference to AP1 because it is using the same channel C1. Now, access point AP1 can choose to decide to **change its channel in use and switch to another channel** after a random time after the interference experienced by it exceeds a certain threshold. The choice of its new channel will be based on the statistical information collected and stored by it over time for all other channels); and a channel connection module configured to facilitate the new wireless communication between the access point and the client over the best wireless communications channel ([0059]. Specifically, Malhotra et al. recite at step 202, AP1 first waits a random time between 0 and 20 ms. At step 204, a channel variable j is set to

1. Now, at step 206, the access point AP1 will **switch to channel j**, please see section [0060]).

Regarding claim 13, Malhotra et al. disclose all the limitation in claim 12. Further, Malhotra et al. disclose the system wherein the client is configured to scan the plurality of communications channels for the best wireless communications channel selected and to communicate with the access point over the best wireless communications channel ([0060]. Notice that, Malhotra et al. recite in an alternative embodiment of the present invention, **the network station 5, 6 may be a telecommunication device in which the components of interface card 30** are incorporated as known to those skilled in the art in section [0057] and in an alternative embodiment of the present invention, **the access point AP1, AP2 may be a telecommunication device in which the components of interface card 130** are incorporated as known to those skilled in the art in section [0059]. **Therefore, NS 1 and NS 2 would be able to perform these functions as AP 1 and AP2, please see (fig. 3 and fig. 4 [0053]).**

Regarding claim 14, Malhotra et al. disclose all the limitation in claim 12. Further, Malhotra et al. disclose the system wherein the client is configured to receive a notification from the access point of the best wireless communications channel selected and to communicate with the access point over the best wireless communications channel ([0072]).

Regarding claim 15, Malhotra et al. disclose a client, NS 1 ([0053]) mitigation apparatus for mitigating access point data rate degradation with respect to a wireless communication between an access point and a client, the client mitigation apparatus

comprising: a notification module configured to receive a notification of a best wireless communications channel in response to a transmission of a notification signal from the access point ([0072]); and a channel switching module configured to discontinue a previous wireless communication with the access point over a previous wireless communications channel prior to facilitating a new wireless communication with the access point over the best wireless communications channel ([0059] and [0060]. Notice that, Malhotra et al. recite in an alternative embodiment of the present invention, **the network station 5, 6 may be a telecommunication device in which the components of interface card 30** are incorporated as known to those skilled in the art in section [0057] and in an alternative embodiment of the present invention, **the access point AP1, AP2 may be a telecommunication device in which the components of interface card 130** are incorporated as known to those skilled in the art in section [0059]. **Therefore, NS 1 and NS 2 would be able to perform these functions as AP 1 and AP2, please see (fig. 3 and fig. 4 [0053])**.

Regarding claim 16, Malhotra et al. disclose a process for mitigating access point data rate degradation with respect to a wireless communication between an access point and a client, the process comprising: assessing a plurality of communications channels ([0059]. Malhotra et al. recite the choice of its new channel will be based on the statistical information collected and stored by it over time for all other channels); establishing a plurality of communications quality parameters, each communications quality parameter associated with one of the plurality of communications channel ([0059]. Malhotra et al. recite the choice of its new channel will be based on the statistical information collected and stored by it over time for all other channels; selecting

a best communications channel from the plurality of communications channels based on the plurality of communications quality parameters ([0059]. Malhotra et al. recite the activation of an interfering source IS shown in FIG. 1 will cause sudden interference to AP1 because it is using the same channel C1. Now, access point AP1 can choose to decide to change its channel in use and switch to another channel after a random time after the interference experienced by it exceeds a certain threshold; and facilitating a new wireless communication between the access point and the client over the best communications channel ([0072]).

Regarding claim 17, Malhotra et al. disclose all the limitation in claim 16. Further, Malhotra et al. disclose the process further comprising notifying the client of the best wireless communications channel selected ([0072]).

Regarding claim 18, Malhotra et al. disclose all the limitation in claim 16. Further, Malhotra et al. disclose the process further comprising discontinuing a previous wireless communication with the client over a previous wireless communications channel prior to facilitating the new wireless communication with the client over the best wireless communications channel, wherein the previous wireless communications channel is one of the plurality of communications channels that is not the best communications channel ([0059]).

Regarding claim 19, Malhotra et al. disclose all the limitation in claim 16. Further, Malhotra et al. disclose the process further comprising identifying one of the plurality of communications channels on which no interference is detected as an interference-free channel, discontinuing assessing the plurality of communications

channels in response to identifying the interference-free channel, and selecting the interference-free channel as the best network ([0072]).

Regarding claim 20, Malhotra et al. disclose a process for mitigating access point data rate degradation with respect to a wireless communication between an access point and a client, the process comprising: monitoring ([0071]) and assessing a plurality of communications channels ([0059]); establishing a plurality of communications quality parameters, each communications quality parameter associated with one of the plurality of communications channels ([0059]); selecting a best wireless communications channel from the plurality of communications channels based on the plurality of communications quality parameters ([0059]); notifying the client of the best wireless communications channel selected ([0072]); discontinuing a previous wireless communication with the client over a previous wireless communications channel ([0059]); and facilitating a new wireless communication between the access point and the client over the best wireless communications channel ([0072]).

Regarding claim 21, Malhotra et al. disclose a computer readable storage medium comprising computer readable code configured to carry out a process for mitigating access point data rate degradation with respect to a wireless communication between an access point and a client, the process comprising: assessing a plurality of communications channels ([0059]. Malhotra et al. recite the processor means 121 is connected to memory units 118, 122, 123, 124 which store instructions and data in section [0057]); establishing a plurality of communications quality parameters, each communications quality parameter associated with one of the plurality of communications channel; selecting a

best communications channel from the plurality of communications channels based on the plurality of communications quality parameters; and facilitating a new wireless communication between the access point and the client over the best communications channel.

Regarding claim 22, Malhotra et al. disclose all the limitation in claim 21. Further, Malhotra et al. disclose the computer readable medium wherein the process further comprises assessing a power intensity and a duration of an interfering signal present on one of the plurality of wireless communications channels ([0052]. Malhotra et al. recite the processor means 121 is connected to memory units 118, 122, 123, 124 which store instructions and data in section [0057]).

Regarding claim 23, Malhotra et al. disclose all the limitation in claim 21. Further, Malhotra et al. disclose the computer readable medium wherein the process further comprises assessing a type of interference source communicating an interfering signal present on one of the plurality of wireless communications channels ([0052]. Malhotra et al. recite the processor means 121 is connected to memory units 118, 122, 123, 124 which store instructions and data in section [0057]).

Regarding claim 24, Malhotra et al. disclose all the limitation in claim 21. Further, Malhotra et al. disclose the computer readable medium wherein the process further comprises notifying the client of the best wireless communications channel selected ([0072]. Malhotra et al. recite the processor means 121 is connected to memory units 118, 122, 123, 124 which store instructions and data in section [0057]).

Regarding claim 25, Malhotra et al. disclose all the limitation in claim 21. Further, Malhotra et al. disclose the computer readable medium wherein the process further comprises discontinuing a previous wireless communication with the client over a previous wireless communications channel prior to facilitating the new wireless communication between the access point and the client over the best wireless communications channel, wherein the previous wireless communications channel is one of the plurality of wireless communications channels that is not the best communications channel ([0059]. Malhotra et al. recite the processor means 121 is connected to memory units 118, 122, 123, 124 which store instructions and data in section [0057]).

Regarding claim 26, Malhotra et al. disclose all the limitation in claim 21. Further, Malhotra et al. disclose the computer readable medium, wherein the process further comprises identifying one of the plurality of communications channels on which no interference is detected as an interference-free channel, discontinuing assessing the plurality of communications channels in response to identifying the interference-free channel, and selecting the interference-free channel as the best network ([0072]. Malhotra et al. recite the processor means 121 is connected to memory units 118, 122, 123, 124 which store instructions and data in section [0057]).

Regarding claim 27, Malhotra et al. disclose all the limitation in claim 21. Further, Malhotra et al. disclose the computer readable medium wherein the process further comprises assessing the plurality of communications channels and establishing the plurality of communications quality parameters upon initial startup of the access point

([0059]. Malhotra et al. recite the processor means 121 is connected to memory units 118, 122, 123, 124 which store instructions and data in section [0057]).

Regarding claim 28, Malhotra et al. disclose all the limitation in claim 21. Further, Malhotra et al. disclose the computer readable medium wherein the process further comprises periodically assessing the plurality of communications channels and updating the plurality of communications quality parameters as specified by a user ([0059]. Malhotra et al. recite the processor means 121 is connected to memory units 118, 122, 123, 124 which store instructions and data in section [0057]).

Regarding claim 29, Malhotra et al. disclose all the limitation in claim 21. Further, Malhotra et al. disclose the computer readable medium wherein the process further comprises tracking a plurality of communications quality parameter histories ([0059] and [0060]. Malhotra et al. recite the processor means 121 is connected to memory units 118, 122, 123, 124 which store instructions and data in section [0057]).

Regarding claim 31, Malhotra et al. disclose all the limitation in claim 21. Further, Malhotra et al. disclose the computer readable medium wherein the process further comprises determining the presence of an interfering signal on one of the plurality of communications channels ([0052] and [0059]. Malhotra et al. recite the processor means 121 is connected to memory units 118, 122, 123, 124 which store instructions and data in section [0057]).

Regarding claim 32, Malhotra et al. disclose computer readable storage medium comprising computer readable code configured to carry out a process for mitigating

access point data rate degradation with respect to a wireless communication between an access point and a client, the process comprising: monitoring ([0071]) and assessing a plurality of communications channels ([0059]. Malhotra et al. recite the processor means 121 is connected to memory units 118, 122, 123, 124 which store instructions and data in section [0057]); establishing a plurality of communications quality parameters, each of the communications quality parameters associated with one of the plurality of communications channels ([0059]. Malhotra et al. recite the processor means 121 is connected to memory units 118, 122, 123, 124 which store instructions and data in section [0057]); selecting a best wireless communications channel from the plurality of communications channels based on the plurality of communications quality parameters ([0059] and [0060]. Malhotra et al. recite the processor means 121 is connected to memory units 118, 122, 123, 124 which store instructions and data in section [0057]); notifying the client of the best wireless communications channel selected ([0072]. Malhotra et al. disclose); discontinuing a previous wireless communication with the client over a previous wireless communications channel ([0059]. Malhotra et al. recite the processor means 121 is connected to memory units 118, 122, 123, 124 which store instructions and data in section [0057]); and facilitating a new wireless communication between the access point and the client over the best wireless communications channel ([0072]. Malhotra et al. recite the processor means 121 is connected to memory units 118, 122, 123, 124 which store instructions and data in section [0057]).

Regarding claim 33, Malhotra et al. disclose an access point mitigation apparatus for mitigating access point data rate degradation with respect to a wireless communication between an access point and a client, the apparatus comprising: means

for assessing a plurality of communications channels ([0059]); means for establishing a plurality of communications quality parameters, each communications quality parameter associated with one of the plurality of communications channel ([0059]); means for selecting a best communications channel from the plurality of communications channels based on the plurality of communications quality parameters ([0059]); and means for facilitating a new wireless communication between the access point and the client over the best communications channel ([0072]).

Reasons for Allowance

3. The following is an examiner's statement of reasons for allowance:

Regarding claim 10

Claim 10 is objected to as being dependent upon a rejected base claim 9, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reason for the indication of allowance: the prior art made of record and considered pertinent to the applicant's disclosure does not disclose nor fairly suggest the access point mitigation apparatus wherein the channel assessment module is further configured to assess the plurality of communications channels and **update the plurality of communications quality parameters in response to a decrease in one of the plurality of communications quality parameter histories.**

Regarding claim 30

Claim 30 is objected to as being dependent upon a rejected base claim 29, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reason for the indication of allowance: the prior art made of record and considered pertinent to the applicant's disclosure does not disclose nor fairly suggest the computer readable medium wherein the process further comprises assessing the plurality of communications channels and **updating the plurality of communications quality parameters in response to a decrease in one of the plurality of communications quality parameter histories.**

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Busch et al. (Pub. No: 2002/0176437) WLAN with channel swapping

McDonnell et al. (Pub. No: 20040152447) authenticating service to a mobile

Deshpande et al. (Pub. No: 2003/0003933) multi service provider network

Seshadri et al. (Pub. No: 2004/0114546) providing a mesh network

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dai A Phuong whose telephone number is 571-272-7896. The examiner can normally be reached on Monday to Friday, 9:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on 703-305-4385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dai Phuong
AU: 2685
Date: 06-23-2005

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